

IN THE CLAIMS

1. (currently amended) A disk array controller, ~~characterized in that it comprises~~ comprising:

a channel interface package in which at least a channel interface unit with a host computer and an access path interface unit are packaged;

a disk interface package in which at least a disk interface with a disk drive and an access path interface unit are packaged; and

a memory package in which a memory unit for storing control data for the disk drive and an access path interface unit are packaged, and

AI ~~that~~ wherein connections are made between the access path interface unit in the channel interface package and the access path interface unit in the memory package and between the access path interface unit in the disk interface package and the access path interface unit in the memory package by cables.

2. (currently amended) The disk array controller as defined in claim 1, ~~characterized in that it has~~ further comprising:

a plural plurality of said memory packages ~~and that~~;

wherein connections are made between the access path interface unit in the channel interface package and the access path interface unit in each of the plural memory packages, and between the access path interface unit in the disk interface package and the access path interface unit in each of the plural memory packages by cables.

3. (currently amended) The disk array controller as defined in claim 2, ~~characterized in that~~ wherein the plural memory packages are interconnected by cables.

4. (currently amended) The disk array controller as defined in claim 2, ~~characterized in that~~ wherein the memory units packaged in the plural memory packages store the same data.

A₁ 5. (currently amended) The disk array controller as defined in claim 2, ~~characterized in that~~ wherein power is supplied from different power supplies to respective memory package of the plural memory packages.

6. (currently amended) The disk array controller as defined in claim 1, ~~characterized in that~~ further comprising a platter:
wherein the channel interface package and the disk interface package are mounted on athe platter,
wherein a first path and a second part are printed on the platter,
wherein the first path couples the channel interface package to the cables,
and
wherein the second path couples the disk interface package to the cable.

7. (currently amended) The disk array controller as defined in claim 1, ~~characterized in that~~ further comprising:

a first and a second platters;

a first cable coupling the channel interface package and the memory packages; and

a second cable coupling the disk interface package and the memory package,

wherein the channel interface package is mounted on the first platter, and the disk interface package areis mounted on the second platterdifferent platters.,

wherein a path coupling the channel interface package to the cable is printed on the first platter, and

wherein a path coupling the disk interface package and the cable is printed on the second platter.

8. (currently amended)A disk array controller, ~~characterized in that it comprises~~comprising:

an interface package in which at least a channel interface unit with a host computer and an access path interface unit are packaged;

a disk interface package in which at least a disk interface with a disk drive and an access path interface unit are packaged; and

a cache memory package in which a cache memory unit for temporarily storing data to be recorded into the disk drive and an access path interface unit are packaged, ~~and~~

~~that~~wherein connections are made between the access path interface unit in the channel interface package and the access path interface unit in the cache

memory package and between the access path interface unit in the disk interface package and the access path interface unit in the cache memory package by cables.

9. (currently amended) The disk array controller as defined in claim 8, ~~characterized in that it has~~ further comprising:

a plural plurality of said cache memory packages, and

~~that~~ wherein connections are made between the access path interface unit in the channel interface package and the access path interface unit in each of the plural cache memory packages and between the access path interface unit in the disk interface package and the access path interface unit in each of the plural memory packages by cables.

10. (currently amended) The disk array controller as defined in claim 9, ~~characterized in that~~ wherein the plural cache memory packages are interconnected by cables.

11. (currently amended) The disk array controller as defined in claim 9, ~~characterized in that~~ wherein the cache memory units mounted in the plural cache memory packages store the same data.

12. (currently amended) The disk array controller as defined in claim 9, ~~characterized in that~~ wherein power is supplied from different power supplies to respective cache memory package of the plural cache memory packages.

13. (currently amended) ~~A disk array controller, characterized in that it comprises~~ comprising:

a channel interface unit to be connected with a host computer;

a disk interface unit to be connected with a disk drive;

a memory interface unit for storing control data for the disk drive;

an interface platter on which a ~~the~~ channel interface unit and the disk interface unit ~~to be connected with a host computer and a disk interface unit to be connected with a disk drive~~ are mounted;

a memory platter on which a ~~the~~ memory unit for storing control data for the disk drive is mounted;

a cable which ~~connects~~ couples the interface platter and the memory platter;
and

a selector unit, connected coupled with the channel interface unit, the disk interface unit and the memory unit, which selects requests from the channel interface unit and the disk interface unit,

wherein a path coupling the channel interface unit to the cable is printed on the interface platter,

wherein a path coupling the disk interface unit to the cable is printed on the interface platter, and

wherein a path coupling the memory unit to the cable is printed on the memory platter.

14. (currently amended)The disk array controller as defined in claim 13,
~~characterized in that~~wherein the selector unit is mounted on the interface platter,
and

wherein a path coupling the selector unit is mounted on the interface platter.

A₁ 15. (currently amended)The disk array controller as defined in claim 14,
~~characterized in that~~wherein the selector unit and the memory unit are
~~connected~~coupled.

16. (currently amended)The disk array controller as defined in claim 13,
~~characterized in that~~wherein the selector unit is mounted on the reverse of the
interface platter's surface on which the channel interface unit and the disk interface
unit are mounted.

18. (currently amended)A disk array controller, ~~characterized in that it~~
~~comprises~~comprising:

a channel interface unit to be coupled with a host computer;

a disk interface unit to be coupled with a disk drive;

a cache memory unit for storing data to be recorded into the disk drive;

A₂ an interface platter on which a~~the~~ channel interface unit ~~to be connected with~~
~~a host computer and a~~the disk interface unit ~~to be connected with a disk drive~~ are
mounted;

a memory platter on which ~~the~~a cache memory unit for storing data to be recorded into the disk drive is mounted;

a cable which ~~connects~~couples the interface platter and the memory platter;
and

a selector unit, ~~connected~~coupled with the channel interface unit, the disk interface unit and the cache memory unit, which selects requests from the channel interface unit and the disk interface unit;

wherein a path coupling the channel interface unit to the cable is printed on the interface platter,

wherein a path coupling the disk interface unit to the cable is printed on the interface platter, and

wherein a path coupling the cache memory unit to the cable is printed on the memory platter.

19. (currently amended)The disk array controller as defined in claim 18, ~~characterized in that~~wherein the selector unit is mounted on the interface platter;
and

wherein a path coupling the selector to the cable is printed on the interface platter.

20. (currently amended)The disk array controller as defined in claim 19, ~~characterized in that~~wherein the selector unit and the cache memory unit are ~~connected~~coupled.

21. (currently amended) ~~The disk array controller as defined in claim 19,~~
~~characterized in that~~ wherein the selector unit is mounted on the reverse of the
interface platter's surface on which the channel interface unit and the disk interface
unit are mounted.

22. (currently amended) A disk array controller, ~~characterized in that it~~
~~comprises~~ comprising:

plural channel interface units each of which is coupled with a host computer;

plural disk interface units each of which is coupled with a disk drive;

plural platters on each of which a ~~the~~ channel interface unit, ~~to be connected~~
~~with a host computer, a disk interface to be connected with a disk drive and a~~
~~memory unit for storing control data for the disk drive are mounted; and~~

~~a cable which interconnects the plural platters;~~ the disk interface unit and the
memory units are mounted; and

a cable which couples the plural platters,

wherein a path coupling the channel interface unit to the cable is printed on
each of the plural platters,

wherein a path coupling the disk interface unit to the cable is printed on each
of the plural platters, and

wherein a path coupling the memory unit to the cable is printed on each of the
plural platters.

23. (currently amended) The disk array controller as defined in claim 22, ~~characterized in that~~ wherein the cables include a cable which ~~connects~~ couples the channel interface unit or the disk interface unit on one of the plural platters, with the memory unit on another one of the plural platters.

24. (currently amended) The disk array controller as defined in claim 22, ~~characterized in that it has~~ further comprising:

A₂ a selector unit, ~~connected~~ coupled with the channel interface unit, the disk interface unit and the memory unit which are mounted on one of the plural platters, which,

wherein said selector unit selects requests from the channel interface unit and the disk interface unit.

25. (currently amended) The disk array controller as defined in claim 24, ~~characterized in that~~ wherein the selector unit is mounted on said one of the ~~platter~~ plural platters, and

wherein a path coupling the selector unit to the cable is printed on the platter.

26. (currently amended) The disk array controller as defined in claim 24, ~~characterized in that~~ wherein the selector unit is ~~connected~~ coupled with the channel interface unit and the disk interface unit which are mounted on another one of the plural platters.

27. (currently amended) A disk array controller, ~~characterized in that it comprises~~ comprising:

plural channel interface units each of which is coupled with a host computer;

plural disk interface units each of which is coupled with a disk drive;

plural cache memory units for storing data to be recorded into the disk drive;

plural platters on each of which ~~at the channel interface unit to be connected with a host computer, at the disk interface unit to be connected with a disk drive and at the cache memory unit for storing data to be recorded into the disk drive are~~ mounted;

cables which interconnect ~~couple~~ the plural platters; and

a selector unit, ~~connected~~ coupled with the channel interface unit, the disk interface unit and the cache memory unit which are mounted on ~~one~~ a first platter of the plural platters, ~~which,~~

wherein said selector unit selects requests from the channel interface unit and the disk interface unit,

wherein a path coupling the disk interface unit to the cable is printed on each of the plural platters,

wherein a path coupling the disk interface unit to the cable is printed on each of the plural platters, and

wherein a path coupling the cache memory unit to the cable is printed on each of the plural platters.

28. (currently amended)The disk array controller as defined in claim 27,
~~characterized in that~~wherein the selector unit is mounted on ~~the platter~~ a second
platter of the plural platters.

29. (currently amended)The disk array controller as defined in claim 27,
~~characterized in that~~wherein the selector unit is ~~connected~~coupled with the channel
interface unit and the disk interface unit which are mounted on ~~another one~~ a third
platter of the plural platters.

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30. (currently amended)A disk array controller, ~~characterized in that it~~
~~comprises~~comprising:

a channel interface unit to be coupled with a host computer;

a disk interface unit to be coupled with a disk drive;

a memory unit for storing control data for the disk drive;

a first platter on which ~~a~~the channel interface ~~unit~~to be connected with a host
~~computer~~ is mounted;

a second platter on which ~~a~~the disk interface unit ~~to be connected with a disk~~
~~drive~~ is mounted;

a third platter on which ~~a~~the memory unit ~~for storing control data for the disk~~
~~drive~~ is mounted;

a first cable which ~~connects~~couples the first and third platters; and

a second cable which ~~connects~~couples the second and third platters.

wherein a path coupling the channel interface unit to the first cable is printed on the first platter,

wherein a path coupling the memory unit to the first cable is printed on the third platter, and

wherein a path coupling the memory unit to the second cable is printed on the third platter.

A₂ 31. (currently amended) The disk array controller as defined in claim 30, ~~characterized in that it has~~ comprising:

a cache memory unit for storing data to be recorded into the disk drive;

a fourth platter on which a~~the~~ cache memory unit for storing data to be recorded into the disk drive is mounted;

a third cable which connects~~couples~~ the first and fourth platters; and

a fourth cable which connects~~couples~~ the second and fourth platters;

wherein a path coupling the cache memory unit to the third cable is printed on the fourth platter, and

wherein a path coupling the cache memory unit to the fourth cable is printed on the fourth platter.

A₃ 36. (currently amended) A disk array controller, ~~characterized in that it comprises~~ comprising:

a channel interface unit to be coupled with a host computer;

a disk interface unit to be coupled with a disk drive;

a memory unit for storing control data for the disk drive;

an interface platter on which ~~at~~the channel interface ~~unit~~to be connected with a
~~host computer and at~~the disk interface unit ~~to be connected with a disk drive~~ are
mounted; and

a memory platter on which ~~at~~the memory unit ~~for storing control data for the~~
~~disk drive~~ is mounted;

a cable which couples the interface platter and the memory platter,

wherein a path coupling the channel interface unit to the cable is printed on
the interface platter,

wherein a path coupling the disk interface unit to the cable is printed on the
interface platter;

wherein a path coupling the memory unit to the cable is printed on the
memory platter, and

wherein the interface platter is perpendicular to the memory platter.

37. (currently amended)A disk array controller, ~~characterized in that it~~
~~comprises~~comprising:

plural channel interface units each of which is coupled with a host computer;

plural disk interface units each of which is coupled with a disk drive;

a memory unit for storing control data for the disk drive;

plural interface platters on each of which ~~the~~a channel interface unit ~~to be~~
~~connected with a host computer and at~~the disk interface unit ~~to be connected with a~~
~~disk drive~~ are mounted; and

a memory platter on which ~~athe~~ memory unit for storing control data for the disk drive is mounted;

plural cables each of which couples each of the plural interface platters and the memory platter,

wherein a path coupling the channel interface unit to the cable is printed on each of the plural interface platters,

wherein a path coupling the disk interface unit to the cable is printed on each of the plural interface platters,

wherein a path coupling the memory unit to the cable is printed on the memory platter, and

wherein the memory platter is located between the plural interface platters.

38. (currently amended) A disk array controller, ~~characterized in that it comprises~~ comprising:

plural channel interface units each of which is coupled with a host computer;

plural disk interface units each of which is coupled with a disk drive;

plural memory units for storing control data for the disk drive;

plural platters on each of which ~~athe~~ channel interface unit to be connected with a host computer, ~~athe~~ disk interface unit to be connected with a disk drive and ~~athe~~ memory unit for storing control data for the disk drive are mounted;

a cable which couples each of the plural platters,

wherein a path coupling the channel interface unit to the cable is printed on each of the platters,

wherein a path coupling the disk interface unit to the cable is printed on each of the platters,

wherein a path coupling the memory unit to the cable is printed on each of the platters, and

wherein ~~one of the plural platters~~ the first platter of the plural platters is located above ~~another one of the plural platters~~ the second platter of the plural platters.

39. (currently amended) The disk array controller as defined in claim 38, ~~characterized in that~~ wherein said ~~one~~ first platter and said ~~other~~ second platter are vertical.

41. (currently amended) A disk array controller, ~~characterized in that it comprises~~ comprising:

a channel interface unit to be coupled with a host computer;

a disk interface unit to be coupled with a disk drive;

a cache memory unit for storing data to be recorded into the disk drive;

an interface platter on which ~~the~~ a channel interface unit ~~to be connected with a host computer and a~~ the disk interface unit ~~to be connected with a disk drive~~ are mounted; and

a memory platter on which ~~a~~ the cache memory unit ~~for storing data to be recorded into the disk drive~~ is mounted;

a cable which couples the interface platter and the memory platter,

wherein a path coupling the channel interface unit to the cable is printed on the interface platter,

wherein a path coupling the disk interface unit to the cable is printed on the interface platter,

wherein a path coupling the memory unit to the cable is printed on the memory platter, and

wherein the interface platter is perpendicular to the memory platter.

A4 42. (currently amended) ~~A disk array controller, characterized in that it comprises~~ comprising:

plural channel interface unit each of which is coupled with a host computer;

plural disk interface unit each of which is coupled with a disk drive;

a cache memory unit for storing data to be recorded into the disk drive;

plural interface platters on each of which a ~~the channel interface unit to be connected with a host computer and a~~ the disk interface unit ~~to be connected with a disk drive~~ are mounted; and

a memory platter on which a ~~the cache memory unit for storing data to be recorded into the disk drive~~ is mounted;

plural cables each of which couples each of the plural interface platters to the memory platter,

wherein a path coupling the channel interface unit to the cable is printed on the interface platter,

A4

wherein a path coupling the disk interface unit to the cable is printed on the interface platter,

wherein a path coupling the cache memory unit to the cable is printed on the memory platter, and

wherein the memory platter is located between the plural interface platters.
